

REMARKS

Claims 1-3 and 5-13 were pending and under consideration.

In the FINAL Office Action of June 23, 2003, claims 1-3 and 5-13 were rejected. It is noted with appreciation that claim 5 would be allowed if rewritten.

In response, claims 1, 5, 6 and 8 have been amended. Claims 3 and 13 have been cancelled. Claim 14 is added as a new dependent claim.

A. Objection to Claim 1

As noted by the Examiner, Applicants have amended claim 1 according to Examiner's suggestion. Accordingly, Applicants respectfully request withdrawal of this objection.

B. §112 Rejections

Claim 13 was rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claim 13 has been cancelled thereby rendering the rejection moot.

Claims 1-3 and 5-13 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Claim 1 has been amended to recite "said diene compound contained in the solid electrolyte is not less than 75% of the total content thereof." Claim 5 has been rewritten from independent form to dependent form as suggested by the Examiner. Claim 6 has been amended to recite "wherein said solid electrolyte contains a non-aqueous solvent" as suggested by the Examiner. Accordingly, Applicants respectfully request withdrawal of these rejections.

C. §102(b) and §103(a) Rejections

Claims 1, 6, 8, 9, 11 and 12 are rejected under 35 U.S.C. §102(b) as being anticipated by Takeda et al. (U.S. Patent No.: 5,658,687). Claims 1-3, 6-10, and 12 are rejected under 35

U.S.C. § 103(a) as being unpatentable over Juichi et al. (JP 09-035746) in view of Linden, Handbook of Batteries (pgs 36.1-36.3; 36.13-36.16). Applicants respectfully traverse these rejections.

The present invention provides a solid electrolyte cell in which oxidative decomposition of the solid electrolyte components may be suppressed to maintain superior cell performance. To do so, Applicants discovered that a diene compound which can capture active hydrogen should be contained in at least one of the positive electrode, the negative electrode and the solid electrolyte in order to capture the active oxygen to prevent oxidative decomposition of the electrolyte components.

Claim 1 recites a solid electrolyte cell comprising: a positive electrode having a positive electrode current collector and a positive electrode active material; a negative electrode having a negative electrode current collector and a negative electrode active material; and a solid electrolyte comprising a first solid electrolyte layer and a second solid electrolyte layer; wherein each of the positive electrode, negative electrode and the solid electrolyte comprises a diene compound; and said diene compound contained in the solid electrolyte is not less than 75% of the total content thereof.

In contrast, while Takeda et al. teaches that cyclodiene, cyclopentadiene and 1,3-cyclohexadiene are added in an amount of 2-5wt% as a binder in the positive electrode (col. 15, line 24), Takeda et al. does not disclose a diene compound contained in the solid electrolyte. Furthermore, Takeda et al. does not disclose that the amount of diene compound contained in the solid electrolyte is not less than 75% of the total content thereof.

Thus, unlike Applicants' claim 1, Takeda et al. fails to disclose or even suggest a diene compound being not less than 75% of the total content in the solid electrolyte. Having less than 75% of diene compound contained in the solid electrolyte allows suppression of oxidative deterioration of the electrolyte component.

Accordingly, Applicants' invention is not anticipated under 35 U.S.C. §102(b) over Takeda et al.

As for the §103(a) rejection, while Juichi et al. discloses that an electrolytic solution containing diene is poured into a cell containing the positive electrode, the negative electrode and the separator and while Linden discloses that lithium batteries have either liquid organic electrolytes or solid polymer electrolytes, neither reference discloses or even suggests that the diene compound is contained in the solid electrolyte in an amount not less than 75%.

Accordingly, it would not have been obvious to one skilled in the art at the time when the invention was made to combine the references as suggested by the Examiner to derive what is recited in claim 1.


Applicants respectfully submit that this rejection has been overcome and request that it be withdrawn.

Claims 2-3, 6-10, 12 and 14 all depend directly or indirectly from claim 1 and are therefore allowable for at least the same reason that claim 1 is allowable.

In view of the foregoing, it is submitted that the pending claims 1-3, 5-12 and 14 are patentable over the references cited by the Examiner. Further, all of the Examiner's objections and rejections have been addressed herein. It is, therefore, submitted that the application is in condition for allowance. Notice to that effect is respectfully requested.

Respectfully submitted,

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